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The Discounting of Immigrants' Skills in Canada

Evidence and Policy Recommendations

Naomi Alboim,
Ross Finnie and
Ronald Meng

Immigration and Refugee Policy

IRPP

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Shaping Canada's Future: Immigration and Refugee Policy / Bâtir l'avenir : la politique relative à l'immigration et aux réfugiés

Research Director / Directrice de recherche
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The Discounting of Immigrants' Skills in Canada:

Evidence and Policy Recommendations

Naomi Alboim,
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and Ronald Meng

Introduction

It is well-documented in the economics literature that when immigrants enter Canada, they tend to start at a significant earnings disadvantage relative to native-born Canadians but then narrow this gap over time – although there is some question whether or not the native-born/immigrant gap is ever fully eliminated. Another well-established fact, which lies at the heart of this dynamic, is that the economic returns to human capital – education and labour market experience – appear to be lower for immigrants, especially those who belong to visible minorities, than for native-born Canadians (Baker and Benjamin 1994). In the results presented below, for example, we find that immigrants start with an overall earnings disadvantage of about 30 percent, and make up just a little under 3 percent of that gap over the first five years spent in Canada.

The native-born/immigrant earnings gap and the "discounting" of immigrants' human-capital investments (i.e., the fact that their returns to schooling and work experience seem to be lower than for non-immigrant Canadians) could occur for a number of reasons. One is pure racial discrimination. A second is that immigrants' less proficient English and French language skills prevent them from fully utilizing – and thus receiving the complete benefits of – their educational qualifications. Another possibility is that the quality of the education and experience credentials held by immigrants is, on average, lower than that of native-born Canadians. Or it may be that the particular type of education or work experience possessed by some immigrants is not as well suited to the Canadian economy. Alternatively, Canadian employers may lack the information required to evaluate, and thus fully remunerate, immigrants' labour market and education experiences. Finally, certain types of skilled trade workers

and professionals may find it difficult to obtain Canadian accreditation for the professional standing they held in their country of origin.

This paper is in two main parts. In the first, we report the results of an empirical examination of the returns to Canadian- and foreign-obtained education and labour market experience. This analysis is based on a microdata file that is unusual because of the particular combination of variables it possesses, which enables us to investigate these issues in a way that has not previously been possible. First, the data include explicit identification of the country in which immigrants obtained their education – their country of origin or Canada. Second, there is a measure of immigrants' reading skills in English and French, which enables us to control for language skills when analyzing the returns to education and job experience acquired elsewhere. And finally, there are variables indicating whether or not the individual is an immigrant, the year of immigration, the age at immigration, and ethnicity, allowing us to impute the amount of foreign-obtained work experience and to break the analysis down by immigration source region.

With this empirical context established, the second part of the paper discusses a number of policy implications derived from the findings, including the sorts of government programs that could possibly increase the returns to – and thus reduce the discounting of – immigrants' skills, with positive net benefits for immigrants, employers and the Canadian economy as a whole. The objective of the paper is thus to provide an empirical basis for discussions regarding immigrants' foreign-obtained education and experience, and to examine the kinds of policies that could lead to a more efficient use of their skills.

That said, we are unable to provide much evidence on *which* of the above underlying factors are causing the discounting, and therefore to say what might be the precise magnitudes of the policies we discuss. For example, inasmuch as discounting is an information problem whereby employers do not know what immigrants' education and work experiences are truly worth in the Canadian labour market, there might indeed be a role for government to help overcome the classic public-good aspect of the situation by helping to arrange for the provision of that information. On the other hand, to the extent that the lower returns to immigrants' skills are largely due to their having education and experience that are inherently worth less than education and experience acquired in Canada by nonimmigrants, the sorts of initiatives we discuss will be less effective since the problem is of a more fundamental nature. And finally, if the lower earnings of immigrants stem from pure racial discrimination, the appropriate policy prescriptions would presumably be more directly targeted at that problem rather than relying on the kind of labour market interventions we examine below. In short, this paper represents but one contribution to this issue, and it is hardly the last. As better data become available, the frontiers of our understanding will be pushed out commensurately. Here, we only hope to make a small contribution to this general project by exploiting a rather unique database to report a new set of estimates regarding immigrants' earnings patterns and discuss some of the associated policy issues.

The Empirical Analysis

Previous research

Income differences between native- and foreign-born Canadians have been studied a great deal in recent decades. Do immigrants earn less than people born in this country? If so, how much? What factors account for this gap? Do immigrants catch up over time? Have these relationships changed for more recent arrivals?

The answers to these and other questions are interesting not just for academic reasons, but also for their policy implications regarding the economic, social and political integration of immigrants into the Canadian mainstream, especially at a time when the numbers of immigrants entering the country remains high, and given that the character of the immigrant population in terms of racial makeup and country of origin changed significantly in the 1980s and 1990s.

As noted above, one general finding in the literature is that after controlling for various factors that affect earnings, including years of education and labour market experience, immigrants appear to start at a significant disadvantage relative to native-born Canadians when they enter the country, but then catch up over time – the well-known "years since immigration" effect. It is open to debate whether the native-born/immigrant gap is ever fully eliminated, but in the most recent work there seems to be general agreement that for nonwhite immigrants who have arrived in Canada since the 1980s, the initial earnings gap has widened and the catch-up rate has slowed down (Baker and Benjamin 1994).

Another standard finding since Chiswick's seminal paper (1978) is that the economic returns to human capital, especially education, appear to be lower for immigrants, especially those of non-European origin. Specifically, even though immigrants' levels of human capital, such as years of schooling, degrees held and years of experience, are often higher than those of comparable native-born Canadians, the economic rewards that the foreign-born receive for these skills are lower.

Studies on the economic status of immigrants abound in Canada and elsewhere; many of them address immigrants' initial earnings disadvantages relative to native-born Canadians and the degree to which they then close that gap in the years following their arrival. Borjas (1999) provides a comprehensive survey of the literature at the international level, while Baker and Benjamin (1994, 1997) and Bloom, Grenier and Gunderson (1995) look at the Canadian situation. Both Baker and Benjamin (1994) and Bloom, Grenier and Gunderson (1995) paint a particularly bleak picture of the immigrant integration process, pointing to a serious decline in the economic status of immigrants in Canada. Bloom, Grenier and Gunderson, for example, find that the 1981-85 immigrant cohort started at a 34 percent earnings disadvantage compared to native-born Canadians, while the 1976-80 cohort had started at a 19 percent disadvantage.

As for the specific issue of the educational attainment and work experience of immigrants and how these skills contribute to their earnings levels in Canada, Pendakur and Pendakur (1998), using 1991 census data, find significant earnings gaps between whites and nonwhites that are not explained by differences in the usual human-capital measures, and then examine the role that the nonrecognition of foreign academic credentials plays in explaining these gaps. For males, they find that individuals from the United States and the United Kingdom who are assumed from the data to have been educated in their country of origin actually earn significantly more than immigrants from those countries who finished their education in Canada. Conversely, degree holders from central Europe face an earnings penalty compared to those who finished their schooling in Canada.

Somewhat surprisingly, these authors find no earnings disadvantage for men who finished their schooling in southern Europe, Asia or Africa. Given these findings, the country in which the individual finished his degree does little to help explain the overall native-born/immigrant earnings gap. In the case of women, those who obtained their degrees in the US, the UK, Asia and Africa earn less than comparable immigrants who obtained their degrees in Canada.

Hum and Simpson (1999) use the Survey of Labour and Income Dynamics (SLID) to examine the earnings of a variety of minority groups while controlling for the amount of foreign education. They find that being educated primarily outside Canada has little effect on the earnings of men or women for either visible minorities or others. Their identification of foreign education is superior to some other studies because it is explicit rather than an imputation based on age at immigration, but they do not break foreign education down by country or region, so their results reflect only an overall average effect in this regard.

Using 1996 census data, Li (2001) compares the market worth of foreign and domestic degrees, again based on imputations of where the individual finished his or her schooling. Controlling for gender and visible-minority status in a standard human-capital earnings function, he finds foreign credentials to have only a minor effect on the earnings of immigrants.

In a slightly different vein, Reitz (2000) attributes the recent declines in employment rates and earnings levels of newly arrived immigrants, including both skilled (degree-holding) and unskilled individuals, as well as whites along with visible minorities, to higher educational levels among the native-born, especially in those areas where immigrants have traditionally had an advantage and where a degree is essential, such as in the professions. More specifically, during most of the period under investigation (1971-96), the educational levels of the native-born rose more rapidly than those of immigrants, and native-born Canadians were moving into areas of education more suited to the knowledge-based information economy than were immigrants.

Of greatest pertinence to the methodology adopted in the present discussion is a recent paper by Friedberg (2000), who explicitly models the different returns to human-capital skills acquired inside and outside the host country (Israel), using data from the 1983 Israeli census of population and housing. The returns to education obtained outside Israel are lowest for men from Africa and Asia, while the highest returns are for immigrants from western Europe and North America. Estimating a "conventional" model similar to the one that generally characterizes the Canadian literature, Friedberg finds that immigrants are at a 25 percent earnings disadvantage upon

entering Israel, but that this gap is fully explained by the lower returns to human capital obtained in their country of origin.

In even more recent work on the US situation, Bratsberg and Ragan (2002) compare the earnings of immigrants who do and those who do not acquire US schooling to find that the returns to education are higher for those with US schooling than for those with foreign education only. Returns also depend on whether the immigrant obtains any US schooling at all. These outcomes vary with the country of origin; foreign education is worth more for individuals from countries with more developed economies and where English is an official language, while obtaining education in the US is most important for those from less developed, non-English-speaking countries.

In a similar vein, but using a different approach better suited to their data (they cannot explicitly identify the country in which the individual's schooling or work experience was obtained), Schaafsma and Sweetman (2001) use the 1986, 1991 and 1996 Canadian census microdata files to examine the relationship between age at immigration and earnings in Canada. They find that foreign work experience seems to have little impact on immigrants' earnings in Canada. They also find that individuals arriving at an early age – who may be presumed to have obtained more of their schooling in this country – have returns to education similar to those of native-born Canadians, whereas those who arrived later have increasingly lower returns to education.

The data

Our analysis uses Statistics Canada's Survey of Literacy Skills Used in Daily Activities (LSUDA) database, which has previously been used by researchers to link individuals' incomes to their literacy (and numeracy) levels.[3] For our purposes, the LSUDA database has several distinct advantages over other well-known databases, such as the Canadian census. The most important is that the country in which immigrants obtained their education – including Canada – is explicitly identified. More specifically, individuals were asked if they were born in Canada and, if the answer was no, what was the highest level of education obtained outside the country. All individuals, both immigrants and nonimmigrants, were also asked about their level of education obtained in Canada. From this information it is possible to determine an immigrant's foreign and Canadian education.

The LSUDA database also contains information on individuals' reading skills, scored from 0 to 500 as tested in the language of choice (English or French). This is particularly useful for our analysis, since in many cases immigrants' first language is neither English nor French, and any deficiency in their language skills could be tracked through the foreign-education and foreign-experience variables in the absence of an explicit measure of literacy.

In addition, the database contains information on the individual's immigration status, year of immigration and age at immigration for the foreign-born, and whether they are white or belong to visible minorities.[4]

The age of respondents is provided, and unlike many other data sources, such as the Canadian census, this information is given precisely in the master file used in this analysis, so that we are not restricted to using coded categories for this variable. From this information we can estimate foreign and Canadian work experience for immigrants, and Canadian work experience for the native-born.

The LSUDA file comprises a weighted survey of 9,455 people, 16 to 69 years old, living in Canada in 1989. Our sample is restricted to individuals aged 21 to 64 who can be identified as being immigrant or native-born. Individuals: could not have been in school at the time of the survey; neither could they have been self-employed; and they had to have worked at least 26 weeks in the previous 12 months. Since we proxy experience with the standard Mincer identity of age minus years of education, we restrict our analysis to the male population, because (as is well known) this procedure yields a much less reliable estimate of experience (one of our key variables) for females. Given these sample selection rules, our results should provide representative estimates of the return: to foreign and Canadian education and experience among the labour force cohort thus represented.[5]

One drawback of the LSUDA file is that we are forced to use annual income as the dependent variable, rather than earnings. However, earnings comprise most of total income for prime-age men, so our analysis is not likely to suffer greatly from this restriction. Our final sample consists of 2,102 men, 1,851 of them being native-born and 251 being immigrants.

Table 1 lists the sample means of the variables used in the analysis. Immigrants are, on average, five years older than native-born Canadians (42 versus 37). They also have more years of education (13.4 years versus 12.4), 74 percent of it obtained before immigrating, as well as more experience (23.7 years versus 19.6), 70 percent of it gained abroad. They have been in Canada for an average

Table 1
Description of Variables

	Native-born Canadians	Immigrants
1989 annual income (log)	10.31	10.35
Total years of education (ED)	12.8	13.4
Years of foreign education (ED_F)		9.9
Years of Canadian education (ED_C)		3.5
Total years of experience (EX)	19.6	21.1
Years of foreign experience (EX_F)		7.5
Years of Canadian experience (EX_C)		10.7
Age	37.0	42.1
Age at immig. (IAGE)		21.6
Years in Canada (YSM)		20.4
Weeks worked in last 12 months	38.3	38.0
Member of visible minority (nonwhite) (VISMIN)	1.0	34.1
Literacy score (LIT)	282.0	249.5
Lives in (CITY):		
Atlantic Canada (ATL)	8.1	2.5
Quebec (QUE)	26.2	17.1
Ontario (ONT)	36.1	51.0
Prairie Provinces (PRA)	16.5	14.7
British Columbia (BC)	9.7	12.7
City > 100,000 (BIGCITY)	46.5	67.2
City between 30,000 and 99,999 (SIZE1)	11.2	3.6
City < 30,000 and rural area (RURAL)*	29.1	8.0
N	1,851	251

* Reference groups

of 20 years, having arrived at an average age of 22. Immigrants are more likely to live in larger cities and are more concentrated in Ontario and British Columbia than the nonimmigrant population. Average (log) incomes for the two groups are almost the same (10.35 versus 10.31).[5] Immigrants are less fluent in English or French, as indicated by their literacy test scores – perhaps not surprising, given that 34.1 percent of them are visible minorities (Statistics Canada definition).

The general returns to education and experience

Table 2 presents our results for the combined native-born and immigrant samples. Column 1 shows the estimates for a simple human-capital earnings function similar to that found in some of the earlier immigration literature. It includes a general immigrant effect and a years-since-immigration variable (YSM), but does not take account of where the immigrant obtained his education and work experience. Upon entering Canada, immigrants' incomes are estimated to be approximately 30 percent lower than those of people born in this country, after which they catch up to the native-born at a declining rate (i.e., the quadratic in YSM). The overall rate of return to an additional year of education is approximately 7.6 percent, and the return to experience (in terms of higher earnings), on average, 1.5 percent per year.[6]

Column 2 then follows more recent work in adding pre- and postimmigration experience and education to the specification, while also including quadratic experience terms to better represent the standard human-capital earnings function. The returns to experience (EX_j) and education (ED_j) gained in Canada are, however, still constrained to be equal for immigrants and the native-born. The results clearly indicate that the standard specification listed in column 1 yields biased estimates and an unrealistic picture of the economic assimilation of immigrants.[7]

More specifically, the immigrant coefficient estimate is much smaller and no longer statistically significant. This implies that taking account of human capital obtained before arrival in Canada explains virtually the entire income gap between immigrants and the native-born. The rate of return to schooling inside Canada for immigrants and nonimmigrants alike (ED_C) is 7.0 percent, while the return to foreign schooling for immigrants is 6.5 percent.[8]

More dramatic, however, are the differences in the returns to experience gained inside versus outside Canada. The linear term of the foreign-experience variable (EX_F) is less than one-third of that of the domestic-experience variable (EX_C). Taking the squared term into account and looking at the effects for a certain number of years of experience to see how these effects accumulate, we find that the benefit of four years of foreign experience yields a total return of 7.6 percent, while four years of domestic experience yields a total return of 19.3 percent. In other words, one year of domestic experience generates the same return as two-and-a-half years of foreign experience.[9]

Table 2
The Determinants of Income: Total Sample (*t*-statistics in parentheses)

	(1)	(2)	(3)	(4)	(5)	(6)
immigrant	0.2964 (3.98)	0.0529 (1.38)	0.1686 (3.19)	0.2294 (3.44)	0.1621 (2.91)	0.2382 (2.79)
EE	0.0261 (14.64)					
EX	0.0738 (13.05)					
EM	0.0142 (2.07)					
YRIMM	0.0011 (2.19)					
EE_2		0.0430 (7.46)	0.0357 (8.00)	0.0425 (8.14)	0.0445 (8.39)	0.0465 (7.84)
EE_3		0.0186 (4.28)	0.0146 (3.47)	0.0163 (3.81)	0.0183 (4.18)	0.0214 (3.73)
EX_2		0.0283 (4.62)	0.0210 (3.13)	0.0267 (3.98)	0.0248 (3.64)	0.0211 (2.94)
EX_3		0.0011 (3.42)	0.0011 (3.13)	0.0010 (2.89)	0.0011 (3.13)	0.0012 (3.09)
EX_4		0.0182 (3.90)	0.0090 (2.23)	0.0083 (2.03)	0.0072 (1.78)	0.0052 (1.13)
EX_5		0.0008 (3.46)	0.0008 (4.14)	0.0012 (5.84)	0.0009 (4.66)	0.0009 (4.01)
immigrant·AT			0.0207 (3.49)	0.0220 (3.72)	0.0204 (3.56)	0.0208 (3.33)
immigrant·EX			0.0055 (2.13)	0.0062 (2.56)	0.0039 (1.57)	0.0041 (1.50)
YCOMN					0.1545 (3.79)	0.1515 (3.70)
immigrant·YCOMN					0.1189 (3.23)	0.1230 (3.25)
AT				0.0011 (1.62)	0.0013 (2.10)	0.0014 (2.20)
AS						0.1370 (2.46)
UR						0.0581 (2.53)
YRS						0.1282 (3.81)
YE						0.0269 (3.89)
YE*2						0.0663 (2.71)
SCHL						0.0333 (0.96)

Table 2
The Determinants of Income: Total Sample (*t*-statistics in parentheses) (cont.)

	(1)	(2)	(3)	(4)	(5)	(6)
Constant	9.0824 (145.6)	8.8559 (131.9)	8.8086 (120.4)	8.5165 (95.4)	8.5275 (95.6)	8.5894 (95.5)
R^2	0.20	0.25	0.25	0.26	0.27	0.28
F	105.9	101.1	79.3	75.7	65.4	46.2
N	2,102	2,102	2,102	2,102	2,102	2,102

Columns 1 to 6 represent equations defined as follows:
1. A simple human-capital earnings function including a general immigrant effect and years-since-immigration variable.
2. Equation (1) adding pre- and postimmigration experience and education.
3. Equation (2) adding domestic experience and education for immigrants.
4. Equation (3) adding literacy.
5. Equation (4) adding visible-minority status and the interaction of immigration and visible-minority status.
6. Equation (5) adding province and city size.

Next, we allow for differences in the returns to domestic experience and education for the native-born and immigrants (column 3). Although the immigrant coefficient estimate is now positive, it remains statistically insignificant (some reasons for this finding will become apparent below), while the returns to foreign human capital remain below those for domestic human capital; in fact, the gaps actually widen relative to those observed under the preceding specification. Native-born Canadians receive approximately 7.4 percent higher earnings for their domestically obtained education, while immigrants' foreign education is worth 5.4 percent per year. The return to the education that immigrants receive in Canada is 2.1 percent less than what the native-born receive (Immigrant•ED_i), meaning – more surprisingly – that the return to immigrants' pre- and postimmigration education appears to be about the same (.0738–.0207=.0531 versus .0537).

Even more important to the native-born/immigrant income gap, however, is the fact that the return to foreign experience, although statistically significant, again begins at less than one-third of the value of a year of native-born experience, with four years of non-Canadian experience being worth just 5.6 percent, versus 19.2 percent for the Canadian experience gained by native-born Canadians. Conversely, though – and quite interestingly – the term that allows for the return to immigrants' Canadian-gained experience to differ from what native-born Canadians receive (Immigrant•EX_i) is very close to zero and not statistically significant.[10]

Columns 4 to 6 add to the specification, in steps, tested literacy (LIT), visible-minority status (VISMIN) and the interaction of immigration and visible-minority status (Immigrant•VISMIN), as well as a series of dummy variables representing the regions and city size. The results are interesting, but the most important outcome is that the major findings regarding foreign and domestically obtained human capital are robust across these alternative specifications.[11]

The literacy measure has the expected positive coefficient: once it is added to the model, the returns to both foreign and domestic education fall by about one percentage point. This suggests that some of the returns to education – domestic and foreign alike – are actually related to language skills (or to other abilities with which literacy is correlated) rather than to education per se.[12]

More relevant to the principal theme of this paper, however, is the fact that the returns to immigrants' foreign education remain substantially below those gained by native-born Canadians, while the returns to their Canadian-obtained education also remain below those of native-born Canadians and close to what immigrants gain for their foreign-obtained education. In short, the lower value of immigrants' education in the Canadian labour market remains when we take account of the disadvantages they have with respect to Canadian language skills.

Turning to foreign work experience, however, we see that the returns do indeed rise somewhat with the addition of the literacy variable (from .0151 to .0197 on the linear term), suggesting that part of the discounting previously seen appears to be related to the handicap that immigrants have in terms of language skills. That said, the difference between the

returns to foreign experience and what native-born Canadians receive remains very substantial even after taking account of the individual's level of literacy. Not surprisingly, adding the literacy measure changes the returns to immigrants' Canadian experience very little, and it continues to be worth about as much as what native-born Canadians receive.[13]

The inclusion of the VISMIN indicator and the Immigrant-VISMIN interaction effectively leaves the Immigrant variable on its own to represent "white" immigrants. These men, mostly from the United States and European countries, are seen to enjoy an income premium over native-born Canadians (i.e., the coefficient on Immigrant is positive and statistically significant). This finding could, however, stem at least in part from constraining their foreign education and experience to be discounted to the same degree as nonwhite immigrants', given that our limited sample size precluded the estimation of separate returns to foreign human capital by visible-minority status. Taking the Immigrant and Immigrant-VISMIN interaction together suggests there is little or no income disadvantage for nonwhite immigrants once we take account of the lower returns they receive for their foreign-obtained human capital. Meanwhile, the incomes of Canadian-born visible minorities actually exceed those of whites born in this country by about 15 percent (i.e., the VISMIN effect on its own). This result may seem surprising – that is, that visible minorities born in this country typically earn *more* than nonminorities with similar demographic, schooling and labour market characteristics – but similar findings have emerged from other studies, some of them using other datasets (Finnie and Meng 2002; Hum and Simpson 1999).

Most important, however, is the fact that the returns to the different kinds of human capital are similar to those seen with the preceding specifications. Adding province and city size does not alter these findings.

The major findings reported above hold true when we allow for completely separate models for immigrants and the native-born (table 3). One particular additional finding, however, is that an interaction term between foreign and Canadian education (ED_F*ED_C) is positive and statistically significant, indicating that each year of education gained in Canada increases the value of any education previously gained abroad as well as adding its own independent return.

A focus on foreign versus domestic degrees

We now focus on the returns to university degrees obtained in Canada versus degrees acquired abroad – a natural extension of the usual immigrant human-capital literature. Here, we exploit another special characteristic of the LSUDA file – namely, that the database contains information on whether an immigrant has (1) only a foreign degree (or degrees) ($DEGREE_F$), (2) only a Canadian degree(s) ($DEGREE_C$), or (3) at least one degree from a Canadian university and one from abroad ($DEGREE_{BOTH}$). It is assumed, consistent with our general approach in this paper (and with the information available in the LSUDA file), that native-born Canadians obtained their degree(s) in Canada ($DEGREE_{NB}$). Despite this unusual richness of information regarding where individuals obtained their university schooling, the structure of the LSUDA questionnaire remains limited in that we cannot identify who among the native-born is a multiple-degree holder, which immigrants have more than one degree (unless they obtained one abroad and one in Canada) or where immigrants who hold both foreign and Canadian degrees obtained their more recent and/or highest diploma – although it seems safe to say that most double-degree-holders probably started their schooling abroad and finished it in Canada. While we suspect these limitations do not affect our principal findings, only further research with even better data will be able to confirm this.

Our findings with respect to the returns to foreign and Canadian degrees are reported in table 4. We focus first on equation 1, which – as in the earlier part of our analysis – includes only the basic human-capital variables. The foreign- and Canadian-experience terms behave as previously, showing foreign experience to be heavily discounted.[14] To control for the effects of primary and secondary education, years of education to the end of high school (EDHS) and interactions of this variable that indicate, for immigrants, if this education was obtained abroad or in Canada are also included. The results correspond to our earlier finding that immigrants receive lower returns than the native-born, regardless of where their education was obtained.

The first measure of postsecondary education is an indicator of whether the person attended a trade or vocational school (TRADE) or has a diploma or certificate below a university degree (DIP). In each case, the native-born are assumed to have obtained their education in Canada (NB), while immigrants may have had their training either in a foreign country (F) or in Canada ($_{IC}$).

Table 3
The Determinants of Income by Place of Birth (t-statistics in parentheses)

	Native-born Canadians				Immigrants				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
ED_F					0.0538 (6.63)	0.0439 (4.44)	0.0492 (5.09)	0.0537 (5.60)	0.0455 (4.71)
ED_C	0.0737 (16.13)	0.0637 (13.43)	0.0636 (13.41)	0.0606 (12.32)	0.0532 (4.69)	0.0426 (3.33)	0.0437 (3.44)	0.0477 (3.80)	0.0325 (2.65)
EX_F					0.0152 (1.76)	0.0191 (2.19)	0.0175 (2.04)	0.0157 (1.92)	0.0295 (1.82)
EX_C	0.0514 (13.81)	0.0502 (13.23)	0.0505 (13.27)	0.0515 (13.52)	0.0512 (4.92)	0.0508 (4.93)	0.0445 (4.62)	0.0443 (4.58)	0.0455 (3.64)
EX^2_F					-0.0003 (1.67)	-0.0003 (1.83)	-0.0002 (1.39)	-0.0002 (1.00)	-0.0004 (1.56)
EX^2_C	-0.0008 (10.08)	-0.0007 (9.33)	-0.0007 (9.36)	-0.0008 (9.56)	-0.0008 (3.32)	-0.0008 (3.33)	-0.0007 (3.23)	-0.0007 (3.26)	-0.0007 (3.00)
LIT		0.0016 (5.39)	0.0016 (5.41)	0.0015 (4.97)		0.0013 (1.79)	0.0009 (1.26)	0.0008 (1.13)	0.0009 (1.17)
VISMIN			0.1529 (2.26)	0.1492 (2.18)			-0.2286 (3.49)	-0.2265 (3.21)	-0.2718 (3.69)
ATI				-0.1048 (2.67)				0.4362 (1.71)	0.3954 (1.58)
DUF				-0.0479 (2.02)				0.0895 (1.10)	0.1264 (1.53)
PRA				-0.0851 (2.76)				0.2166 (2.20)	0.2355 (2.57)
BC				0.0060 (0.16)				0.0981 (1.57)	0.0951 (1.44)
BCITY				0.0746 (3.02)				0.0299 (0.28)	0.0229 (0.20)
SCITY				0.0363 (1.03)				0.0477 (0.36)	0.0426 (0.31)
$ED_F \div D_C$									0.0058 (3.52)
$EX_F \div X_C$									0.0003 (0.70)
Constant	8.8080 (124.0)	8.5064 (94.7)	8.5006 (94.8)	8.5502 (94.7)	8.9991 (48.9)	8.7787 (39.7)	8.8951 (41.8)	9.0654 (36.38)	9.0852 (33.6)
R^2	0.24	0.25	0.25	0.26	0.30	0.31	0.34	0.36	0.39
F	191.5	153.3	123.6	59.3	19.3	17.1	17.2	11.0	10.8
N	1,851	1,851	1,851	1,851	251	251	251	251	251

Columns 1 to 9 represent equations defined as follows:
1. Equation including the basic human-capital earning variables
2. Equation (1) adding literacy
3. Equation (2) adding visible-minority status
4. Equation (3) adding province and city size
5. Equation including the basic human-capital earnings variables for immigrants controlling for foreign education and experience
6. Equation (5) adding literacy
7. Equation (6) adding visible-minority status.
8. Equation (7) adding province and city size
9. Equation (8) adding the interaction of foreign and Canadian education as well as foreign and Canadian experience

Immigrants who attended a trade school abroad ($TRADE_F$) are estimated to earn about the same return to this training as the native-born ($TRADE_{NB}$), while the returns for both groups are estimated to be greater than for immigrants who received this kind of training in Canada ($TRADE_{IC}$). This latter finding should, however, be interpreted with caution due to both the small numbers involved and the heterogeneity of this kind of schooling, with the smallish *t*-statistics attesting to the relative imprecision of the estimates. A similar discussion applies to the returns to college diplomas (DIP).

As to the four degree variables – the focus of our attention here – the highest return is for individuals who have at least two degrees, one from Canada and one from abroad ($DEGREE_{BOTH}$). Their incomes are, on average, 57 percent higher than those with a high school diploma or less. Perhaps the most interesting result, however, is that there is very little difference between the returns to a Canadian degree for the native-born ($DEGREE_{NB}$) and for immigrants who received their university education entirely in Canada ($DEGREE_{IC}$). The former is estimated to be worth 37.2 percent of higher income on average, and the latter even more – 43.9 percent. Conversely, the return to a foreign degree ($DEGREE_F$) is not statistically different from zero.

Column 2 includes the other explanatory variables previously added to our models. Again, the major findings do not change in any substantial manner. In particular, the returns to all levels of education decline (presumably the result of adding the literacy measure, as previously), but the patterns by level and source country are just reported.

Finally, we posed the question: Does the immigrant's visible-minority status affect the return to foreign and domestic degrees? To address this issue, we interacted VISMIN with the four degree variables. The results appear in column 3. Statistically, there are no differences in the rates of return to a university degree for native-born whites ($DEGREE_{NB}$) and native-born members of visible minorities (the coefficient on $VISMIN{\cdot}DEGREE_{NB}$ is actually positive but not statistically significant), or between visible-minority and white immigrants who obtained their degrees in Canada (i.e., $VISMIN{\cdot}DEGREE_{IC}$ is again positive but again not significant), for whom the returns are quite high. However, the incomes of visible minorities with only a foreign degree are estimated to be far below those of similarly educated white immigrants; this relationship is seen in the strongly negative coefficient (-.2567, indicating a discounting of about 25 percent) on the $VISMIN{\cdot}DEGREE_F$ interaction. Interestingly, minorities who have at least one degree from Canada and one from abroad ($DEGREE_{BOTH}$) have a very significant income premium, even when compared to white immigrants with the same mix of credentials.

Column 4 adds the other control variables to this model. The same overall pattern of the returns to university degrees holds once again. Minority immigrants with multiple degrees do exceptionally well; minority immigrants with only a foreign degree do very poorly, whereas similarly educated white immigrants earn substantial returns to their schooling; there is very little difference between white and minority immigrants who obtain their university degrees in Canada; there is, similarly, little difference in the returns to a Canadian degree between white and nonwhite native-born Canadians. The latter two sets (i.e., immigrants with Canadian degrees and the native-born – minority or white, in either case) all do about the same as each other.

What conclusions do we draw from these results? First, it is evident that a foreign degree held by an immigrant who belongs to a visible minority group is heavily discounted in the Canadian labour market. However, given that there is little difference in the (substantial) returns to degrees obtained in Canada on the part of visible minorities and white immigrants (the returns are actually estimated to be slightly greater for minorities) and that native-born members of minorities holding degrees do about as well (again, actually a little higher) as their white compatriots, direct racial discrimination seems unlikely to be the reason – or at least the sole reason – for this gap. That said, we cannot say why nonwhite immigrants with foreign degrees earn such a low return to their schooling, and cannot rule out some sort of prejudice towards foreign education obtained in certain countries, although differences in the type and quality of schooling, or simply an inability on the part of Canadians to accurately judge the worth of foreign degrees (i.e., an information problem), seem to be more likely explanations.[11]

Table 4
The Return to a University Degree (*t*-statistics in parentheses)

	(1)	(2)	(3)	(4)
Immigrant	0.1340 (1.39)	0.0947 (.099)	0.1355 (1.44)	0.0799 (.083)
EX_F	0.0147 (2.36)	0.0210 (3.28)	0.0178 (2.86)	0.0208 (3.42)
EX_F-EX_F	-0.0003 (2.59)	-0.0003 (2.67)	-0.0003 (2.79)	-0.0003 (2.78)
EX_C	0.0531 (1.486)	0.0518 (4.31)	0.0524 (14.64)	0.0523 (14.34)
EX_C-EX_C	-0.0008 (10.50)	-0.0008 (9.88)	-0.0008 (10.37)	-0.0008 (9.91)
EDHS	0.0654 (6.17)	0.0509 (4.88)	0.0653 (6.16)	0.0512 (4.91)
EDHS-Immigrant$_E$	0.0141 (1.66)	0.0103 (1.28)	0.0137 (1.65)	0.0100 (1.23)
EDHS-Immigrant$_{IC}$	-0.0198 (2.03)	-0.0176 (1.88)	-0.0187 (1.97)	-0.0165 (1.73)
IRADE$_{NB}$	0.1612 (1.77)	0.1021 (1.20)	0.1269 (1.45)	0.1028 (1.20)
IRADE$_E$	0.1613 (1.76)	0.1021 (1.20)	0.1269 (1.45)	0.1028 (1.20)
IRADE$_{IC}$	0.1067 (1.34)	0.0900 (1.17)	0.0912 (1.15)	0.0888 (1.14)
DIP$_{NB}$	0.2272 (7.93)	0.2013 (7.10)	0.2253 (7.85)	0.2024 (7.14)
DIP$_E$	0.2033 (2.17)	0.1663 (1.82)	0.1951 (2.10)	0.1637 (1.80)
DIP$_{IC}$	0.0193 (0.20)	0.0053 (0.06)	0.0438 (0.48)	0.0050 (0.06)
DEGREE$_{NB}$	0.3725 (12.40)	0.3119 (9.89)	0.3706 (12.20)	0.3122 (9.80)
DEGREE$_E$	0.0974 (1.06)	0.0680 (0.74)	0.2298 (2.15)	0.2074 (2.06)
DEGREE$_{IC}$	0.4387 (5.74)	0.3923 (5.42)	0.4256 (5.41)	0.3848 (4.88)
DEGREE$_{BOTH}$	0.5709 (5.37)	0.5261 (4.70)	0.3900 (2.97)	0.3271 (2.33)
VISMIN-DEGREE$_{NB}$			0.0428 (0.65)	0.0105 (0.16)
VISMIN-DEGREE$_E$			0.2567 (1.89)	0.3104 (2.29)
VISMIN-DEGREE$_{IC}$			0.0550 (0.49)	0.0265 (0.23)
VISMIN-DEGREE$_{BOTH}$			0.4287 (3.14)	0.3709 (2.56)

Table 4
The Return to a University Degree (*t*-statistics in parentheses) (cont.)

	(1)	(2)	(3)	(4)
VISMIN		0.0878 (1.96)	0.0994 (1.74)	0.0698 (1.22)
HT		0.0014 (5.29)		0.0014 (5.25)
AB		0.1319 (3.30)		0.1367 (3.39)
QUE		0.0574 (2.53)		0.0612 (2.67)
PRA		0.1064 (3.55)		0.1098 (3.65)
BC		0.0211 (0.68)		0.0278 (0.88)
BCITY		0.0661 (2.72)		0.0652 (2.68)
SCITY		0.0370 (1.06)		0.0369 (1.05)
Constant	8.8663 (73.2)	8.6719 (64.5)	8.8793 (73.1)	8.6985 (64.6)
N	2,102	2,102	2,102	2,101
R^2	0.26	0.28	0.26	0.28
F	41.9	32.8	33.4	28.7

Columns 1 to 4 represent equations defined as follows:
1. Equation including the basic human-capital variables. It also controls for the effects of primary and secondary education, years of education up to the end of high school and interactions of this variable indicating, for immigrants, if this education was obtained abroad or in Canada.
2. Equation (1) adding visible-minority status, literacy, province and size of city.
3. Equation (1) controlling for native-born members of visible minorities with Canadian university degrees, for immigrants belonging to visible minorities with foreign university degrees, for immigrants belonging to visible minorities with Canadian university degrees, and for immigrants belonging to visible minorities with both a Canadian and a foreign degree.
4. Equation (3) adding the variables added in equation (2).

Summary of the Empirical Findings and Their Implications

We have used the master file of the LSUDA database to establish some conventional benchmark findings (perhaps better labelled "naive" findings – as the literature has in many cases moved on from such simple specifications), which suggest that upon arrival, male immigrants' incomes are, on average, about 30 percent below those of native-born Canadians, and then catch up only very slowly over time (just over 1 percent in the first year after arrival, and then at a declining rate). However, once we add measures of the source of their schooling and work experience – foreign- or Canadian-obtained – and allow for different returns to these, the income gap disappears, indicating that it is fully explained by the low returns that immigrants receive for their foreign-acquired human capital. Foreign work experience is particularly discounted, a year of experience being worth only about one-third of what Canadian-based experience is worth, but foreign education also receives lower returns than schooling obtained in Canada (worth only about 70 percent as much).

The discounting of foreign schooling is especially apparent when we focus on the value of foreign university degrees. A foreign degree appears, on average, to have a return worth less than one-third that of a degree obtained in Canada by the native-born (worth about 37 percent in higher earnings as compared to a high school graduate, on average), unless it is held by a

white immigrant, in which case the return is comparable to what a native-born Canadian would receive. At the same time, white and nonwhite immigrants alike receive good returns to any university education obtained in this country, while members of visible minorities born in Canada do as well as white native-born Canadians – all findings that suggest that the discounting of foreign education (of university degrees, in particular) is not a matter of skin colour alone. Immigrants who obtain a degree in Canada after acquiring a degree abroad receive a much higher return to their (total) schooling – about as much as a Canadian degree held by native-born Canadians. This result is particularly interesting, as it suggests that a Canadian diploma matriculates foreign-obtained university degree into a more meaningful, and more valuable, credential.

Our results, which derive from more explicit measures of where individuals obtained their education than has been possible in previous studies, thus add to the empirical evidence illustrating how important it is to take into account the source of immigrants' human capital in order to correctly understand their economic integration into the Canadian labour market. We now turn to the policy implications of these findings.

Policy Implications

The policy discussions in context

The evidence presented above suggests that immigrants' foreign-obtained education and work experience are significantly discounted in Canada. Immigrants educated abroad receive, on average, (1) lower returns to the human capital they acquire abroad than native-born (nonimmigrant) Canadians receive for their education and work experience, (2) lower returns than they receive for Canadian-obtained education and experience, and (3) lower returns than members of visible minorities born in Canada receive for their education and experience (this group appearing to experience no discounting of their investments relative to the nonimmigrant population).

These differences in returns adversely affect immigrants' incomes and hinder their integration into mainstream Canadian society. It was suggested at the outset that such discounting could stem from a number of reasons: language problems, employer uncertainty regarding the value of foreign-obtained credentials and experience, foreign-acquired skills that are of a lower quality or of types less well-suited to the Canadian labour market, difficulties in receiving Canadian accreditation for professional standing gained in another country, or pure racial (or cultural) discrimination.

While we have been unable to identify the role that each of these factors plays in the discounting of immigrants' human capital, many of the potential sources – indeed, all but the last – may imply the existence of market failures or other situations that might call for government and other collective bodies to play a role in order to ensure that immigrants' skills are better used. The "pure racism" issue is left to other discussions, since it lends itself to a different type of policy action.

Our goal here is to suggest some of the kinds of government actions that might be helpful in this respect.[18] The discussion is speculative, however, in that we do not generally identify which policies would pass the types of conventional cost-benefit tests to which government initiatives should normally be subjected. In particular, any intervention should not only benefit immigrants and employers, but it should do so to a degree that justifies its costs on either economic efficiency or equity grounds.

Undertaking such evaluations is beyond the scope of this paper, and here we have the more modest goal of outlining some of the undertakings that might be worthwhile, including some that have already been tried in one form or another on a more experimental basis and that might be expanded or further pursued in some fashion.

Possible justifications for government intervention

What are the theoretical justifications – at least from a standard economics framework – for government interventions to help immigrants apply or expand their skills? One potential justification relates to certain information problems that may underlie the discounting of immigrants' skills. In particular, it is often costly for any given Canadian employer, educational institution or professional regulatory body to accurately assess the value of work experience or education gained in a foreign country. What, for example, is an engineering degree from, say, the University of Bangalore worth as compared to one obtained in Canada? The uncertainty surrounding this sort of information represents a cost that will tend to reduce the value of immigrants' skills in this country. At the

same time, while gaining that information represents an investment cost, once it is gathered it has a clear public-good aspect, since it can then be used by others – employers, education institutions, regulatory bodies – at a low or effectively no marginal cost. The potential role for government or near-government organizations in overcoming such market failures is well established in the economics discipline.[17]

A second potential rationale for government action stems from another traditional public role, which is to see and act beyond the narrow interests held by a single employer, school or professional society, and to pursue the larger set of social benefits that might be realized from helping immigrants to use their foreign-obtained human capital more effectively. These benefits would include reduced dependency on social programs and other savings that result from the successful integration of immigrants into the Canadian labour market. That is, even once the information problem is solved, a full social assessment of the benefits of helping immigrants may imply a role for government in helping immigrants either to realize the benefits of the skills they bring with them from their country of origin or to gain new skills in Canada.

A third potential reason for governments or quasi-government organizations to act is oriented more toward the supply side of the problem, but again relates to information. Immigrants themselves may not know the value of their existing skills, what they are missing, or how to get what they need in order to take full advantage of the credentials and job experience they possess. In short, they may lack the information they need to make rational choices – and to make the associated effective investments – to upgrade their skills. Policy initiatives can help address this kind of problem.

Again on the supply side, some immigrants who would like to make efficient human-capital investments may lack the means to do so. The potential role for government here is similar to the one that underpins student loan programs or some training programs in Canada and around the world, and is basically related to the associated capital market problem. Immigrants – like post-secondary students or workers undergoing training – may have difficulty in securing the financing they need on an individual basis due to a lack of collateral or of other means of securing loans. In helping to overcome these risk problems by guaranteeing loans in one manner or another, or even by becoming the direct lender, governments may be able to lead to a more efficient – higher – level of human-capital investments.[18]

On the institutional side, a need for government action may suggest itself as a result of an associated set of incentive problems. Educational institutions, professional licensing bodies and other parapublic organizations may lack the means and incentives needed to solve immigrants' upgrading needs. Post-secondary funding formulas, for example, often leave institutions shortchanged when they attempt to cater to the sort of limited and select upgrading that many immigrants may need or to award the sorts of equivalency certificates that might be most appropriate for this kind of schooling. Professional regulatory bodies are often seen to serve the narrow interests of their existing members by restricting entry into their field, including on the part of immigrants. Even those organizations that truly serve the broader public interest may focus on ensuring that everyone who is admitted is competent, rather than on ensuring that everyone who is competent is admitted, whereas the public – as well as the immigrants themselves – may lose when admission procedures are too heavily tilted toward the first rather than the second approach.

Government action may be based on other, similar kinds of justifications based on efficiency or equity considerations (i.e., simply wanting to help immigrants). Policy measures of the type discussed below could, therefore, result in increased use of immigrants' foreign-obtained skills in this country in a manner that passes conventional tests of economic efficiency or equity goals – although each possible intervention/program would of course have to be evaluated to ensure that the benefits outweigh the costs. Under the appropriate interventions, immigrants should benefit from higher incomes and from other economic, social and psychological advantages associated with faster and greater integration into the Canadian labour market, while the Canadian economy should benefit from a better utilization of the skills that immigrants bring to this country and from their reduced dependence on income support and other social assistance programs.

As for why immigrants should be the beneficiaries of special programs not necessarily available to the general Canadian population, the simple reason is that the above-mentioned justifications for action might apply to them in a special way. Thus, by targeting programs at the special needs of immigrants (where appropriate), governments might be able to efficiently target a group with initiatives that will provide a net payback not only for that particular group but also in terms of the nation's broader socio-economic interests.

Selection criteria

Before discussing how the discounting of foreign human capital might be addressed, we raise the issue that if education and experience acquired abroad are significantly discounted in Canada, the immigration selection system may not reflect the true value of those skills and may create unrealistic expectations among skilled immigrant workers upon their arrival in this country.

The new point system introduced by Citizenship and Immigration Canada in 1997 was based on the premise that the more education people had, the better they could fill current labour market needs and adapt to changing job requirements, particularly in our emerging knowledge-based economy. Currently, the selection grid allows for up to 25 points (of a possible maximum of 100 and a minimum requirement of 67 points) to be awarded on the basis of degrees, diplomas, certificates and years of study achieved. Of particular relevance to the results reported above, no differentiation is made with respect to where the studies and diplomas were achieved or what their Canadian equivalencies may be.

This inconsistency between the point system and what appears to be the true earning power of foreign-obtained education presumably leads to a flawed selection of immigrants by the very criteria that system is meant to embody, and to disappointment on the part of immigrants once they realize that their educational attainment is discounted in Canada.

There are a variety of possible policy approaches to address this issue. In Australia, for example, immigration candidates are required to have their credentials assessed against Australian standards before even being allowed to apply for immigration. Some Canadian observers have suggested changes to the Canadian immigration point system itself, either by reducing the total number of points awarded for education or by tying the points awarded for education achieved abroad directly to its equivalent in Canada.

The question addressed in the remainder of this section is, however, the following: Are there circumstances in which the government might intervene to mitigate the poor return on human capital immigrants acquire abroad?

A policy approach at the individual level

In general, helping immigrants to better adjust to, and integrate into, the Canadian economy by more effectively using the skills they bring to this country would begin with a full assessment of the education and experience they have acquired abroad. Next, a determination should be made of the gaps (if any) between those assets and what is required to bring the individual's standing up to the Canadian equivalent, in order to allow the individual to practise his or her occupation in Canada or to otherwise realize the maximum benefit from the schooling and experience held at the time of arrival in this country. This, in turn, would help to identify the "gap-filling" educational and experiential measures necessary. The implementation of these remedial interventions (bridge upgrading in the form of education, training and experience), if done as early as possible in the individual's integration process, should help to facilitate entry into the labour market using the newly combined foreign and Canadian education and experience, thereby expediting the catch-up to comparable Canadian-born-and-educated workers.

Assessment

Human-capital assessment can be divided into three areas: academic credentials, occupational competencies and language skills.

Academic credentials

Immigrants may need to have their academic credentials assessed for a variety of purposes: to continue their education at the appropriate level; to gain licensure for a particular trade or profession; and/or to find employment. There are, in fact, already many players in the provision of academic-credential assessment serving different end-users such as employers, educational institutions and regulatory bodies.

Currently, five provincially mandated services are members of the Alliance of Credential Evaluation Services of Canada (ACESC):

- British Columbia: International Credential Evaluation Service (ICES)
- Alberta-Saskatchewan: International Qualifications Assessment Service (IQAS)
- Manitoba: Academic Credentials Assessment Service – Manitoba (ACAS)
- Ontario: World Education Services, Canada (WES)
- Quebec: Service des evaluations comparatives (SEC)

In addition, most post-secondary institutions conduct their own assessments of foreign credentials in order to determine whether individuals applying to them should be accepted into their programs, whether they should be given advanced standing in particular courses of study, and so on – for example, whether someone with a bachelor's degree in social work

obtained abroad should be admitted to a master's in social work program. In some cases, this function is centralized for the institution; in others, each department is responsible for doing its own assessment.

To add to this complexity, occupational regulatory bodies (i.e., self-regulating professional organizations such as the Ontario College of Physicians and Surgeons) have been delegated authority by provincial governments to determine who should be licensed to practice a particular occupation in a particular jurisdiction. Assessing academic credentials forms part of that determination. According to research completed by the Ontario Regulators for Access, regulatory bodies are roughly evenly divided into four categories, depending on whom they rely upon to determine the academic requirements for licensure – their national occupational body (e.g., architecture, physiotherapy, dental hygiene); external assessors, such as universities and provincially mandated credential assessment services; their own internal capacity; or a combination of external and internal resources. However, in many cases there is no automatic acceptance or recognition of assessments of foreign credentials between jurisdictions in Canada, despite various interprovincial mobility agreements.

On the one hand, this Balkanized system leads to a waste of resources (the information-as-public-good problem again), as the wheel of credential assessment is often reinvented over and over, in forms that differ to varying degrees.

On the other hand, the remarkable inconsistencies in approach result in a corresponding variance in outcomes, depending on who does the assessment and for what purpose. Few providers furnish an assessment for all possible purposes (education, employment, licensure), and there is little portability among providers. For example, an internationally trained nurse may need to have his/her credentials assessed by a university to determine eligibility for a graduate degree in nursing, by the Ontario College of Nurses to be licensed as a nurse, and then again by the Quebec College of Nurses if he/she moves to that province to find employment.

Given this plethora of providers of academic credential assessments for different purposes, there is little wonder that a lack of recognition of foreign credentials persists, particularly among employers. In conventional economic parlance, the signals emanating from these processes are varied and often difficult to interpret, diminishing their value. Thus, because existing assessment procedures are inconsistent and diffuse, they are under-used. This diminishes the value of the evaluations in terms of their final use.

Assessment procedures are also handicapped by the difficulties that arise when immigrants come to Canada without the original documents from their home-country universities or colleges, which are needed for their educational attainment to be recognized in this country; these documents are often difficult to obtain once the immigrant has arrived in Canada. Academic assessments could be carried out more efficiently if they were completed before the immigrants left their home country, or at least if immigrants were made aware of the importance of carrying the necessary documents with them. If the assessments were carried out in the home countries, immigrants would also have a more realistic sense of the value of their academic credentials in a Canadian setting before they arrived.

Thus there are various ways in which existing academic evaluation procedures could be improved upon in order to lower their cost and increase their effectiveness; these procedures should also be expanded to widen the net benefits they can generate. To this end, the 2004 federal budget added $5 million to the approximately $13 million allocated in 2003 to Human Resources and Skills Development Canada to work with provinces, sector councils, national occupational bodies and others to address the issue of foreign credential recognition. Given jurisdictional realities and the low probability that a pan-Canadian academic credential assessment service will be accepted, one practical intervention would be for governments to work together to support the strengthening of the Alliance of Credential Evaluation Services of Canada in the following ways:

- expand ACESC membership beyond the five provincially mandated services by encouraging educational institutions and regulatory bodies to join
- adopt common standards for assessment
- develop a common updated data bank of foreign university and college programs to determine Canadian equivalencies
- conduct joint missions to new source countries of immigration to assess their university and college programs
- develop collaborative mechanisms for the mutual recognition and portability of assessments across sectors and jurisdictions
- develop outreach initiatives aimed at employers
- develop customized services for end-users, including verification of bona fides of institutions, degrees and documents; training of in-house assessors; full-service assessments to determine Canadian equivalencies

- offer assessment services to individuals before they emigrate to Canada and to any immigrant anywhere in Canada

This would result in academic credential assessments that are more consistent, credible and portable – and therefore more likely to be recognized and accepted by end-users – while increasing the efficiency with which the assessments are carried out. Improvements would thus be realized on both the demand and supply sides of the benefit-cost equation, resulting in gains for immigrants, Canadian employers and – at least potentially – Canadian society at large (to the degree that the benefits of these undertakings do in fact exceed costs).

Occupational competencies

Canadian employers tend to use previous work experience and references as a proxy for demonstrated skills and competencies. When they are not familiar with the names or functions of the employing organizations and cannot easily get references they trust, they may be reluctant to take a chance on the individual. This is compounded when the individual's work experience was obtained outside Canada. In view of this difficulty in evaluating immigrants' competencies and experience, what can be done to improve the situation?

One option is to provide opportunities for immigrants to demonstrate their skills by putting together "prior learning assessment and recognition" (PLAR) portfolios. Many community colleges and a few universities (e.g., Athabasca University) across the country currently offer such assessments, not only to immigrants but also to others who have skills acquired outside the formal Canadian education system, in order to provide credit for experiential learning and, therefore, exemptions from a course of study. This process can be helpful in other ways as well, as it enables individuals to document the competencies and experience they have acquired in a tangible way that can be more readily understood by employers.

Similarly, competency-based assessment tests use simulated or real environments to evaluate the skills possessed by individuals. Some occupational regulatory bodies are now including this technique in their licensing processes. For example, the College of Midwives of Ontario puts internationally trained midwives seeking licensure in Ontario through a series of simulated and real birthing experiences to assess their competencies. Employers in some sectors (e.g., information technology) test the skills of potential employees by asking them to demonstrate their competencies as part of the hiring process.

These methodologies, while very effective in assessing occupation-specific competencies, are expensive to develop and implement. The cost is often prohibitive if each institution, regulatory body or employer develops its own approach, with no collaboration or sharing of best practices. Governments could provide incentives to support the collaborative development and use of these competency-based assessment tools by post-secondary institutions, regulatory bodies and employers in order to provide a useful means of assessing immigrants' skills in the absence of Canadian work experience or references.

Language skills

Educational institutions want to know if individuals have the language skills required to learn. Employers are interested in the workers' ability to use occupation-specific terminology and to communicate effectively in the workplace, especially given the increased expectation for working in teams. Regulatory bodies need to know if individuals have the language skills to practise their profession.

Yet although skilled immigrants require knowledge of at least one of our official languages in order to meet the points necessary for admission to Canada, their ability to actually practise their occupation in either English or French is not measured. A maximum of 24 points is currently awarded for high proficiency in speaking, reading, writing and listening in both official languages. The tests are generic in nature (that is, they do not test for occupation-specific terminology). Having general language skills does not necessarily imply that one has the communication skills needed to practise one's occupation.

A variety of language tests are currently used by educational institutions to assess the language capacity of potential students in an academic context. A test is also used to determine the language level of immigrants entering the federally sponsored Language Instruction for Newcomers to Canada (LINC) program, although this level of instruction is basic and not labour-market-oriented. Regulatory bodies also use a variety of language tests for licensure purposes, but many of these tests are not occupation-related.

Governments could provide incentives to encourage employer sector councils and occupational regulatory bodies to develop sector-specific language tests. These would provide skilled immigrants and employers with a better assessment of the language

skills needed to practice the relevant occupation than do the tests currently in use for immigration or academic purposes.

Bridge upgrading to fill identified gaps

Once credible, relevant assessments have been made, the gaps between immigrants' existing skills and what is needed for licensure or labour market entry can be identified. Bridge-upgrading programs would provide only the academic, skill, language and work-experience top-ups needed to fill the gaps and bridge the individual to licensure or employment.

Some skilled immigrants may need to complete a few academic courses in order to have their internationally obtained diploma or degree rounded out and – ideally – deemed equivalent to a Canadian credential, especially if that is a requirement for their occupation. Others may need to upgrade their practical skills and competencies, especially if they have been away from their occupation for some time or if the practice of the occupation in their home country is significantly different from what it is in Canada. Some may need to have access to higher-level language courses (beyond those currently offered to all immigrants and refugees through the LINC program) that focus on labour-market and occupation-specific terminology and communication skills. (In its 2004 budget, the federal government announced $15 million in addition to the $5 million allocated in 2003 for Enhanced Language Training pilot projects to be implemented in partnership with employer sector councils and the provinces. This is a good but modest beginning.) Many will benefit from some exposure to the practice of their occupation in the Canadian context.

If the bridge upgrading required is in the form of academic courses provided in a customized but integrated way in our regular post-secondary institutions, it will give immigrants not only the formal learning they need, but also the same sort of preparation as other learners for entry into the labour market in their occupations. Networks can be established, existing work-placement/co-op opportunities can be used and other sorts of learning and job preparation profited from. This would, however, require adopting a more modularized approach to education and otherwise making room for immigrants' needs in ways not reflected in the degree/diploma-focused system currently in place in Canada.

Similar to the recommendation regarding assessments made above, this educational bridging – and indeed all other types of bridge upgrading – could alternatively begin even before the immigrant arrives in Canada. Canadian post-secondary institutions already offer courses overseas and over the Internet. These could be adapted to meet immigrants' special needs. Immigrants could thus conceivably arrive in Canada with Canadian credentials achieved overseas, or at least with a good assessment of their human-capital assets. A business plan is currently being developed with funding from Human Resources and Skills Development Canada to assess the feasibility of this overseas model and to explore the possibility of pilot programs.

With regard to more applied skills, the sooner skilled immigrants get some Canadian experience under their belts, the sooner their experience gained abroad will be valued by Canadian employers and, where licensure is required, by the occupational regulatory bodies. This is not purely a matter of gaining a better understanding of the technical skills involved in the Canadian context, but also of learning how the practice of an occupation in Canada differs from the practice in the immigrant's home country. What are the different legislative frameworks within which the occupation is practised (e.g., the *Regulated Health Practitioners Act*)? What are the codes of conduct? What is the workplace culture? What are some of the norms of behaviour with co-workers, clients, etc.?

More specialized work-placement/internship programs are also likely to be needed to encourage employers to hire skilled immigrants for their first Canadian work opportunity. Federally and provincially funded programs of this nature already exist for youth, persons with disabilities and Aboriginal peoples, but there is no formal set of programs for immigrants. Most labour market programs have been devolved to provincial governments under Labour Market Development Agreements, which require participants to be eligible for employment insurance benefits. Given immigrants' lack of previous labour force attachment in Canada, programs for them will have to be funded from other sources and be designed to suit their needs. The usual gamut of policy instruments could be employed to this end – tax benefits, direct subsidies and other incentives.

As an indication of the need for such programs, the Toronto Region Immigrant Employment Council (TRIEC), a multistakeholder employer-led group, developed an initiative called Career Bridge, which was launched in the summer of 2003 with funding from the Ontario provincial government, to provide precisely these kinds of internships to skilled immigrants. While employers pay the full stipend for the interns during their four-month internship, their risks are mitigated by the fact that all interns are prescreened and are officially employed by Career Bridge. To date, close to 80 percent of

the interns have found employment either during or immediately following their internship.

TRIEC just recently launched a second initiative, called Mentoring Partnership, which, with funding from Human Resources and Skills Development Canada, matches skilled immigrants with volunteer mentors who are practitioners in the occupations that the immigrants wish to enter. The linking of Canadian and immigrant practitioners overcomes some of the information hurdles mentioned earlier and provides the immigrant with some social capital, which makes it possible to overcome some of the discounting of the work experience acquired abroad. These are the kinds of program initiatives that could be expanded to make a real difference for the labour market integration of immigrants.

The problem is that bridge-upgrading programs – academic, language, work experience – are generally not available or accessible to most skilled immigrants across Canada. Ontario has the widest range of such programs among the provinces, including programs for internationally trained nurses, midwives, teachers, medical radiation technologists, medical laboratory technologists, respiratory therapists, precision machinists, financial service officers, and construction and manufacturing tradespeople. These programs are particularly effective when they include an integrated approach to academic upgrading, occupation-specific language training and work experience. According to the Ministry of Training, Colleges and Universities (the funder of Ontario's bridging programs), preliminary evaluation results are very positive. While the formal evaluation results will not be available until spring 2005, preliminary data show that 100 percent of those who completed Ryerson's midwifery bridging program became licensed; 70 percent of internationally trained nurses who completed the Care for Nurses bridging program passed their licensing exams, as opposed to the previous pass rate of 33 percent; 98 percent of internationally trained pharmacists who completed the University of Toronto's pharmacy bridging program passed the academic and knowledge requirements for licensure, as opposed to the previous rate of 20 percent; and as a result of bridging programs at the Michener Institute for Applied Health Sciences, the pass rate has improved from 20 percent to 80 percent.

However, even in Ontario these programs are offered to just a relatively small number of individuals in a few occupations and in a limited number of locations. Moreover, they are time-limited pilot projects that have generally not been "mainstreamed" into the institutions offering them.

The programs have nonetheless proved their value: the majority of those who have accessed them are getting licensed; institutions are looking at ways to integrate these programs into their core programming (which will require both funding-formula and policy changes). Occupational regulatory bodies are active partners in these initiatives and some are amending their processes as a result. Moreover, employers are trusting the results. In fact, in the case of the pharmacy project, more than 50 percent of the participants are now sponsored by employers.

In the absence of more bridging programs, many immigrants, when faced with the prospect of receiving no credit for their previous education and experience, and therefore of having to start their education and training all over again, give up hope of ever practising their occupation in Canada and end up unemployed, severely underemployed or working in a totally different occupation. This was documented in a Conference Board of Canada report that estimated that 60 percent of recent immigrants are not employed in occupations that use the education and skills that they acquired abroad.

Conclusion

Various initiatives are being developed across the country in response to the growing recognition of the enormous waste of immigrants' human capital in Canada. For example, Citizenship and Immigration Canada is funding pilot projects working with employers on the development of labour market language training; Human Resources and Skills Development Canada is funding a variety of initiatives under its (narrowly defined) Foreign Credential Recognition Program. Manitoba, British Columbia and Alberta are developing full strategies for the labour market integration of skilled immigrants. Ontario is funding projects with employer associations to encourage employers to hire immigrants; with community colleges and universities to assess their capacity to adapt to the needs of skilled immigrants requiring bridging programs; and with regulatory bodies to assess and identify best practices in the licensing policies and procedures aimed at foreign-trained individuals.

These are all positive signs that policy-makers are beginning to address the issues identified in this paper. Evaluations of these interventions will be instructive when they are complete. There is, however, a need for all the players to work together in order to deal more effectively and more efficiently with these complex issues. These players include all levels of government, educational institutions, employers, unions, regulatory bodies, academic credential assessment services and immigrant settlement agencies, as well as skilled immigrants themselves and their associations.

Initiatives of this kind are in various stages of development and merit watching in Vancouver, Manitoba, Toronto, Ottawa and Halifax. The Toronto initiative is of particular interest because it is civic-led rather than initiated by government. The Toronto Region Immigrant Employment Council was established in 2003, with the participation of all the players named above, to identify and implement the policy and program responses needed to facilitate the entry of skilled immigrants into their chosen occupations. All three levels of government are also participating in the council and in regular intergovernmental committee meetings to address these issues.

It is important to ensure these programs are properly designed and implemented, and to consider extending them when they meet conventional cost-benefit standards. Good evaluation processes will be key. When well designed and executed, they should increase the earnings and speed up the integration of immigrants into the economic and social mainstream, and boost the productivity of the Canadian economy – and all this to a large degree by simply addressing various easily recognizable market failures that leave governments these functions to perform. It is hoped this paper will contribute to the policy discussions surrounding these issues.

Notes

Ross Finnie and Ronald Meng are principally responsible for the empirical sections of the paper and the link between these findings, economic theory and the policy discussions more generally, while the policy section was principally authored by Naomi Alboim. The authors are grateful to the Institute for Research on Public Policy for supporting this research and to Statistics Canada and the Maytree Foundation for assistance in earlier phases of the work. They also wish to thank David Green, Michael Charette, participants at the June 2002 CERF conference at the University of Calgary, participants at seminar presentations made at Trent University and Statistics Canada, attendees of the IRPP conference on immigration policy held in Toronto in May 2002, and two anonymous reviewers for their comments, and Michel Forand, the copy editor. Geneviève Bouchard of the IRPP offered many helpful suggestions and otherwise managed this project through to completion, and her pleasant and professional stewardship has been well appreciated.

1 Li used a topology of four kinds of degree-holders. Native-born Canadians were assumed to have obtained their degrees in Canada. Immigrants who arrived in the country before the age of 13 were also assumed to have obtained a Canadian degree. Individuals who immigrated to Canada after the age of 24 were assumed to have a foreign degree. Those who immigrated between the ages of 13 and 24 were classified as "mixed education degree-holders." See also Li (2000) and Satzewich and Li (1987).

2 For a discussion of the LSUDA file, see Statistics Canada (1991a, 1991b). For a more critical discussion of the database, see Charette and Meng (1998).

3 Statistics Canada defines these categories of individuals as follows: "The 2001 Census provides information on the characteristics of people in Canada who are members of a visible minority, as defined by the Employment Equity Act. The Act defines visible minorities as 'persons, other than Aboriginal peoples, who are non-Caucasian in race or non-white in colour'" (Statistics Canada 2004).

4 As noted, the missing labour market experience variable precludes a meaningful estimation of the standard income models relied upon in this analysis for women. Including part-time workers would be problematic because we only know individuals' full/part-time status and total incomes, not specific hours of work or earnings per se (although including part-time workers did not change the findings in any significant manner). Students are deleted for the usual reason that they are mixing work with school and that their earnings (incomes) are therefore not necessarily a good representation of the returns to their still-accumulating levels (and types) of human capital, while older individuals are removed for similar reasons, as they begin to head into retirement. Finally, we are unable to estimate the relevant models for those missing the basic immigration-based information upon which the analysis is based. Thus, while our sample is significantly smaller than the overall LSUDA file, it employs the observations it can, and there is no reason to believe these deletions impart any specific bias to the findings. That said, we do not think our results are the last word on the issues addressed here, and we would welcome comparisons of our findings with any others that may become available in the future.

5 We discuss log incomes because that is the variable used in the regression analysis, where this treatment is standard, partly because it enables us to interpret the coefficients in terms of the percentage effect on earnings. Transforming the log values into actual dollar amounts yields values of $31,275 and $30,031, respectively.

6 In this first specification, we follow Friedberg (2000) – to which ours is closely related – in including only a linear term for experience.

7 Adding more immigrant variables essentially enables us to identify the factors that underlie the general immigrant-status and years-since-immigration effects found in the simpler specification.

8 Allowing for the returns to education to be nonlinear by adding a squared term does not improve the fit or change the findings in any important way.

9 We re-estimated this equation by allowing for only foreign education or foreign experience – one at a time. In both cases, the entry effect falls significantly, indicating that both foreign education and experience contribute to explaining the income gap between immigrants and native-born Canadians.

10 We do not include a squared term to the Immigrant-EX_f term because doing so does not change the nature of the findings and only renders both the linear and quadratic terms much less precisely estimated.

11 Friedberg (2000) does not include these variables or any other controls in her model. We add them here because we assume that they could be related to the immigrant/native-born gap in a manner that is correlated with the principal human-capital variables. In short, we seek to answer this question: Do the foreign/native-born human-capital results hold when additional explanatory variables are added to the model?

12 Adding measured numeracy in addition to the literacy variable changes the results very little, except to drive down the statistical significance of the literacy measure due to the relatively high correlation of the two variables.

13 Bratsberg and Ragan (2002) focus much more on the language issue in the US context, but they have the benefit of the large sample sizes available in the US census. In our case, interacting the various human-capital variables with either a foreign-language indicator or a place-of-birth variable simply led to high standard errors on the coefficient estimates of interest. It would be interesting for future work using other samples to go further in this direction.

14 The model basically conforms to equation 2 in table 2. Some of the extra interaction terms that did not affect the principal findings are thus omitted in order to keep the specification simple.

15 It would be interesting to compare whites and minorities from the same countries, thus separating out the individual ethnicity effects from the country-of-origin effects, but there are not enough of the required sorts of observations to enable us to do this.

16 The first two parts of this section essentially link the empirical work presented above to the policy discussions that follow, and they provide justification for government interventions from a standard economic theoretical perspective. The remaining parts of the section are largely derived from Alboim and the Maytree Foundation (2002).

17 The fact that information is costly does not, however, necessarily mean that the relevant market will fail. If the information can be effectively privatized and sold, the market can work quite efficiently. (Some would say *Maclean's* magazine's special university issue is a case in point.) We only raise this as one potential justification of government action that we think is grounded in fact; before deciding that action is justified, however, further analysis would be required to identify in what way, in what cases and to what degree there is in fact a market failure of this type. Similar caveats apply to the other potential justifications for government intervention mentioned here.

18 While immigrants are eligible to borrow from the Canada Student Loans Program and its provincial counterparts, and to otherwise benefit from the student financial aid system, that system is essentially geared to helping young individuals whose needs are limited to a relatively modest set of "student lifestyle" expenses, and it will not necessarily meet immigrants' needs, such as supporting an entire family while studying. In addition, student loans are only available to those enrolled in diploma or degree programs, and some provinces have a one-year residency requirement for eligibility. These criteria prevent some immigrants from immediately accessing the upgrading they may need.

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The Discounting of Immigrants' Skills in Canada: Evidence and Policy Recommendations

by Naomi Alboim, Ross Finnie and Ronald Meng

Résumé

La plupart des économistes reconnaissent aujourd'hui que lorsque les nouveaux immigrants arrivent au Canada, leurs revenus du travail sont inférieurs à ceux que touchent les Canadiens de naissance. La valeur économique attribuée au capital humain – c'est-à-dire le niveau d'instruction et l'expérience sur le marché du travail – semble être moins élevée pour les immigrants, en particulier ceux qui appartiennent à des minorités visibles. Ce qui est encore plus grave, par contre, c'est que les analyses récentes démontrent que la situation s'est détériorée. Dans cette étude, Ross Finnie (Université Queen's), Naomi Alboim (Université Queen's) et Ronald Meng (Université de Windsor) examinent la valeur attribuée sur le marché du travail à l'instruction et à l'expérience professionnelle acquises au Canada et à l'étranger par les immigrants de sexe masculin. Cette question tient son importance du fait que le Canada continue d'accueillir chaque année un nombre important d'immigrants, dont la majorité proviennent de pays non-européens.

Les auteurs constatent qu'au moment de leur arrivée, les immigrants ont une rémunération d'environ 30 p. 100 inférieure à celle que touchent les Canadiens de naissance. Les immigrants réussissent par la suite à combler cet écart, mais à un rythme très lent. Après avoir tenu compte du lieu d'acquisition de l'instruction et de l'expérience de travail des immigrants – au Canada ou dans un pays étranger –, les chercheurs estiment que l'écart de rémunération s'explique entièrement par la faible valeur économique attribuée au capital humain que les immigrants ont acquis à l'étranger. Cette dépréciation est particulièrement marquée dans le cas de l'expérience de travail : du point de vue de la rémunération, la valeur d'une année d'expérience acquise à l'étranger n'équivaut en effet qu'à environ le tiers d'une année d'expérience acquise au Canada. Pour ce qui est de la scolarité, la valeur économique de l'instruction acquise à l'étranger se situe à environ 70 p. 100 de celle de la formation acquise au Canada.

Il est difficile d'identifier tous les facteurs qui diminuent la valeur du capital humain des immigrants, et ce n'est d'ailleurs pas là le propos de l'étude. Les auteurs affirment néanmoins qu'il faudra peut-être une intervention de l'État pour surmonter certaines de ces causes, en particulier celles qui découlent de défaillances du marché. Par exemple, les gouvernements pourraient jouer un rôle en aidant les employeurs et les établissements d'enseignement canadiens à obtenir l'information nécessaire pour évaluer la valeur de l'expérience de travail ou de l'instruction acquises à l'étranger. Les autorités publiques pourraient aussi aider les immigrants à trouver l'information qui leur permettra d'acquérir les compétences dont ils pourraient avoir besoin pour tirer pleinement parti de leurs diplômes et de leur expérience professionnelle.

Dans leur examen des options de politiques plus spécifiques, les auteurs se penchent d'abord sur la nécessité d'améliorer notre capacité à mesurer l'instruction et l'expérience que les immigrants ont acquises à l'étranger. Ce processus d'évaluation du capital humain pourrait englober trois éléments : les diplômes, les compétences professionnelles et les aptitudes linguistiques. Chacun de ceux-ci comporte des problèmes auxquels on pourrait s'attaquer au moyen de politiques publiques bien ciblées. Ils évoquent notamment le caractère incohérent et diffus des processus actuels d'évaluation des titres de compétences et proposent que les autorités publiques renforcent l'Alliance canadienne des services d'évaluation de diplômes, l'organisme qui réunit les différents services d'évaluation canadiens. Les auteurs recommandent également que les gouvernements mettent en place des mesures d'incitation pour encourager les établissements d'enseignement postsecondaires, les organes de réglementation et les employeurs à élaborer et utiliser des outils d'évaluation basés sur les compétences, et pour encourager aussi les conseils sectoriels d'employeurs et les organes de réglementation professionnels à mettre au point des tests de langue propres à leurs secteurs respectifs.

Les gouvernements pourraient ensuite, disent les auteurs, faire preuve de leadership en créant des programmes de formation relais destinés à combler les carences en matière de compétences. Il faut notamment plus de programmes de placement et de stages de travail pour encourager les employeurs à embaucher des immigrants qualifiés et pour aider ces derniers à acquérir leur première expérience de travail au Canada. Les gouvernements pourraient également mettre en place des incitations encourageant les établissements d'enseignement à offrir des cours de formation et de langue mieux adaptés aux besoins des immigrants.

Tout en reconnaissant l'intérêt des diverses mesures prises récemment pour tenter de remédier à la situation, les auteurs affirment qu'il faudra en faire davantage. Ils invitent tous les acteurs – les trois paliers de gouvernement, les établissements d'enseignement, les employeurs, les syndicats, les organes de réglementation et les services d'évaluation des diplômes, ainsi que les immigrants qualifiés et les associations qui les représentent – à collaborer pour s'attaquer efficacement à cette question complexe.

Summary

The Discounting of Immigrants' Skills in Canada:
Evidence and Policy Recommendations
by Naomi Alboim, Ross Finnie and Ronald Meng

Most economists today recognize that immigrants tend to start at a significant earnings disadvantage, relative to native-born Canadians, when they enter the country. More importantly, other studies show that this problem has become more acute in recent years. In particular, the economic returns to human capital – education and labour market experience – appear to be lower for immigrants, especially those who belong to visible minorities. In this paper, Ross Finnie (Queen's University), Naomi Alboim (Queen's University) and Ronald Meng (University of Windsor) examine the labour market returns to the Canadian- and foreign-acquired education and labour market experience of male immigrants. This question is of considerable importance, since Canada continues to accept large numbers of skilled immigrants every year, the majority of whom come from non-European countries.

The authors find that, upon arrival, the incomes of male immigrants are, on average, about 30 percent lower than those of native-born Canadians. They subsequently catch up – but slowly – by around 1 percent in the first year after arrival and at a declining rate after that. When the authors take into account the source of immigrants' schooling and work experience, i.e., whether it is acquired abroad or in Canada, they find that the income gap is fully explained by the low returns that immigrants receive for their foreign human capital. Foreign work experience is particularly discounted, a year of non-Canadian experience providing a return valued at only about one-third the value of a year of Canadian experience in terms of nigher earnings. The return to foreign education is equal to about 70 percent of the return to education obtained in Canada. They also find that combining Canadian education with foreign education makes the latter worth more in the Canadian labour market.

Identifying all the factors at play in the discounting of immigrants' human capital is difficult and beyond the scope of this study. The authors argue, however, that overcoming some of the causes, especially those that stem from the existence of market failures, may require government intervention. For instance, one area where governments could play a role is in helping overcome the information problems experienced by Canadian employers and educational institutions who do not know the value of foreign work experience or education. At the same time, governments could help immigrants obtain information about how to acquire the additional skills they may need to take full advantage of the credentials and job experience they possess.

In terms of more specific policy options, the authors first address the need to improve our capacity to fully assess the education and experience immigrants acquire abroad. This human capital assessment process could encompass three areas: academic credentials, occupational competencies and language skills. In each of these areas there are problems that could be addressed with well-designed policy initiatives. For instance, since existing credential assessment processes are inconsistent and diffuse, Finnie, Alboim and Meng argue, government support is needed to strengthen the umbrella group for credential assessment services, the Alliance of Credential Evaluation of Canada. They also recommend that governments introduce incentives to encourage post-secondary institutions, regulatory bodies and employers to develop and use competency-based assessment tools, and employer sector councils and occupational regulatory bodies to develop sector-specific language tests.

Government could also provide leadership in establishing bridging programs to address any skill gaps, say the authors. For instance, there is a need for more specialized work placement/internship programs to encourage employers to hire skilled immigrants and enable immigrants to acquire their first Canadian work experience. Governments could also provide incentives for educational institutions to put in place academic and language courses that are better adapted to immigrants' needs regarding labour market access.

In their conclusion, the authors highlight a number of recent initiatives but argue that more work needs to be done. They call on all the players – the three levels of government, educational institutions, employers, unions, regulatory bodies, academic credential assessment services, immigrant settlement agencies, and skilled immigrants and their associations – to work together to deal effectively with this complex issue. At the same time, such interventions need to be evaluated in terms of standard benefit-cost criteria to ensure they are worth implementing.